

FARM

Electrification

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Michigan Celebrates Consumers Power Company's Connection of 100,000th Farm Customer

Rain Overhead and Mud Underfoot Fails to Dampen Ceremonies at the Fredericks' Farm

(From the Jackson Citizen Patriot of October 7, 1949)

MORE than 2000 persons braved rain overhead and mud underfoot Thursday to help the Consumers Power Co. celebrate connection of electrical service to its 100,000th farm customer.

"The farmyard and the rolling acres of a pasture at the Cletus R. Fredericks farm, southwest of Addison, scene of the celebration, turned into a quagmire during the day, but no one seemed to mind.

"They heard some significant statements regarding rural electrification in Michigan and they were well entertained by Consumers.

THE colorful ceremonies held on the farm of Cletus Fredericks near Hillsdale, Michigan, as reported by the *Jackson (Mich.) Citizen Patriot* in the story on these pages, featured a barbecue for those attending, a speech by the Governor of Michigan, a full-scale farm equipment show by national electrical manufacturers, continuous cooking and home freezing schools for farmers' wives and an all-day band concert by a champion 4-H club band.

The occasion of connecting farm No. 100,000 to Consumers Power Co.

rural lines also signalized a quarter century of pioneering in this field by the company, dating back to the establishment of farm experimental lines on a nationally recognized basis in cooperation with State authorities, farm organizations and farm equipment manufacturers.

Approximately 99 per cent of all farms in Consumers Power territory are now electrified. The company serves more farms than all REA co-operatives in Michigan combined, and at lower average rates than any of them.

"Governor G. Mennen Williams, making the main address at the formal program during the afternoon, spoke of the interdependence of Michigan farms and industry.

Three Wires

"The governor called the 'three wires that carry electricity into the farm home a symbol of the interdependence of farms and industry.'

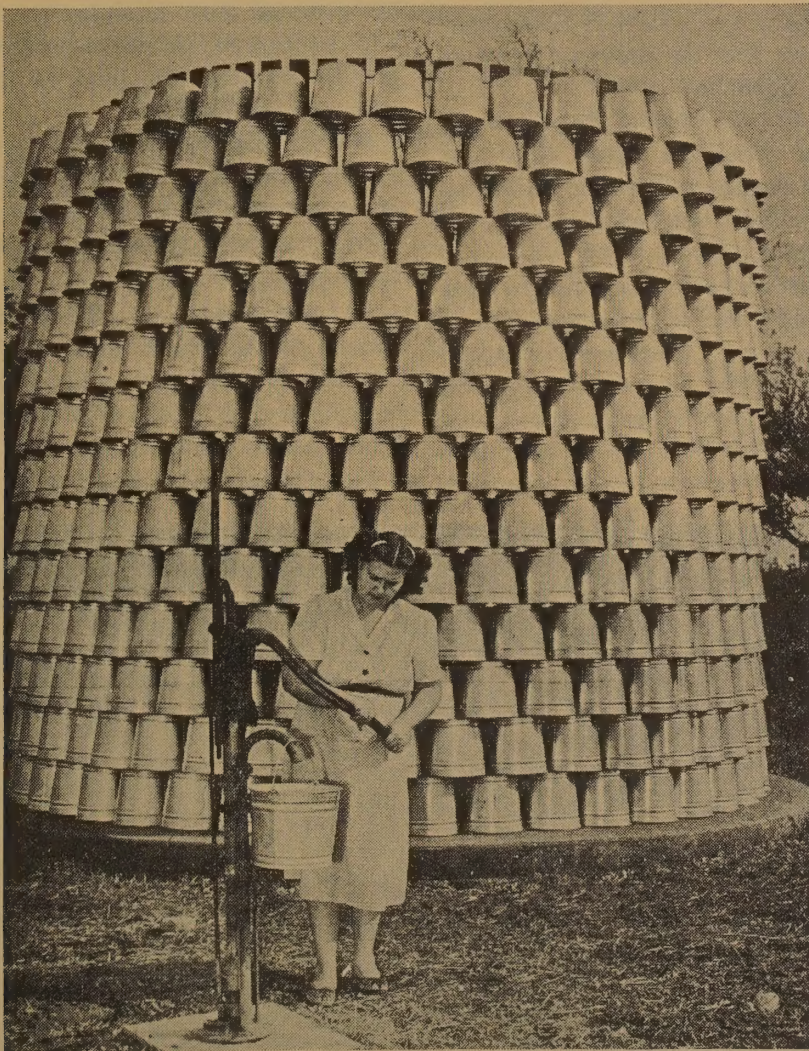
"Those three wires run back to the power plants and to the industries which serve them,' Governor Williams said.

"The state's chief executive congratulated Consumers for an accomplishment which he said is unique. He pointed out that Consumers is the only company in the country which is serving 100,000 farm customers.

"The governor added that Michigan, with 99 per cent of its farms electrified, is the 'champion of all states' in this type of progress.

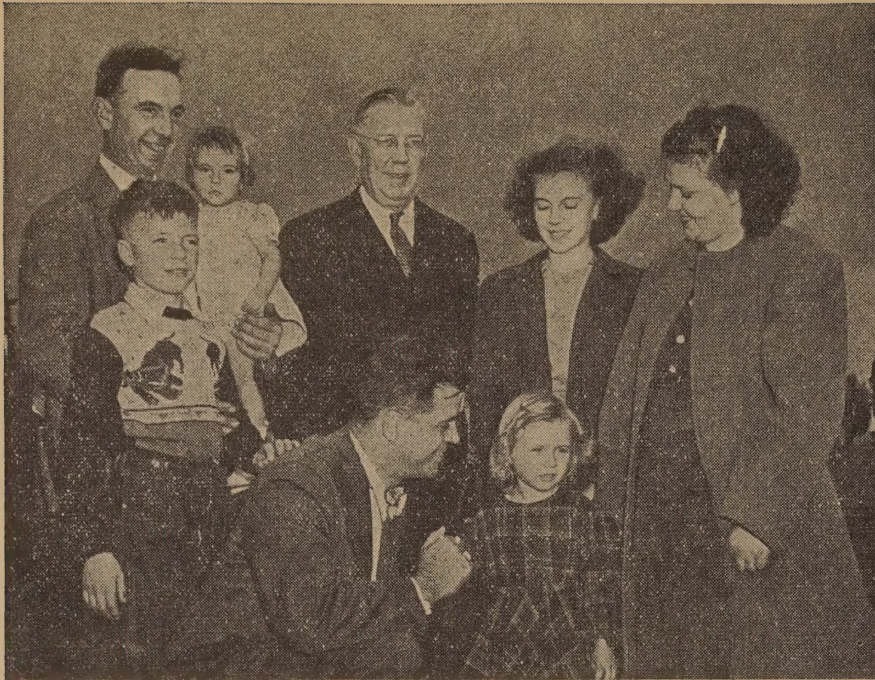
"Here in Michigan,' he said, 'we don't have to choose between the farm and industry. We have both, blended together with a recreation area in which it is marvelous to live.'

"Justin R. Whiting, Consumers Power Co. president, called the event a double celebration for the company. It marked the connection of the 100,000th farm service and the 25th anniversary of the company's first rural line, which ran north from Parma and was built in 1924.



Pails, representing a month's supply of pump water for an average farm family (nearly 5 tons), set the background as Mrs. Cletus Fredericks stands at the old hand pump for the last time. The Fredericks farm, No. 100,000 on Consumers Power Company's lines, whose electrification was dedicated in ceremonies on October 6, 1949, now has electricity to pump water for 4½ cents a month.

"THE FARM ELECTRIFICATION PICTURE OF THE YEAR"



Michigan Governor G. Mennen Williams (kneeling, foreground) and Justin R. Whiting, president of Consumers Power Co. (center, background) are shown with the family of Cletus Fredericks, owner of the 100,000th electrified farm in Consumers Power territory.

Output Increased

"Development of rural electrification," Mr. Whiting said, "is one reason why Consumers has had to increase its generating capacity in the past few years."

"Farm electrification is helping to make Michigan a better state," he added. "It is making farm life easier and more productive and more appealing to the younger generation. In the light of these facts, there is a lot of satisfaction in having had some part in electrifying rural Michigan."

"C. V. Ballard, director of the agricultural extension service of Michigan State College, traced the history of rural electrification in the state and paid a tribute to H. J. Gallagher, general farm service supervisor of Consumers, who presided at the program.

"Mr. Ballard told how Mr. Gallagher, as a member of the college staff, fought for rural electrification and was instrumental in the building of an experimental line between Mason and Dansville in 1927. This line, built by Consumers in cooperation with MSC, proved the value of rural electrification.

Welcome Address

"Dan E. Karn, vice president and general manager of the company, gave the address of welcome and introduced Friedrich Henningsen of Grass Lake, from whom the company purchased the grand champion 4-H Club steer at the county fair.

"Mr. Karn gave the 4-H Club member a check for the purchase price of the steer, \$563.79.

"Beef sandwiches from the prize steer, barrels of Michigan apple cider and bushels of doughnuts kept the crowd out of the rain and busy for about an hour and a half.

"The beef was roasted over an open barbecue on a spit which was turned by an electric motor. Lines moved continuously through the big tent covering the serving tables as the guests picked up a thick sandwich and a cup of cider then came back for seconds, thirds or fourths.

Program Altered

"Consumers officials hastily reshuffled the program arrangements to keep the guests in the shelter of tents as it rained.

"The speaking program was held in the tent which had been set up for the cooking school. The Jackson County 4-H club band performed in the lunch tent, with the music being carried to the main tents and over the grounds by a public address system.

"The area which had been set aside for parking became ankle deep with mud so the company recruited a fleet of tractors from neighboring farmers to pull cars to the gravel road.

"The main program tent was jammed and the public address system carried the words of the speakers to visitors who found shelter in the food and exhibit tents.

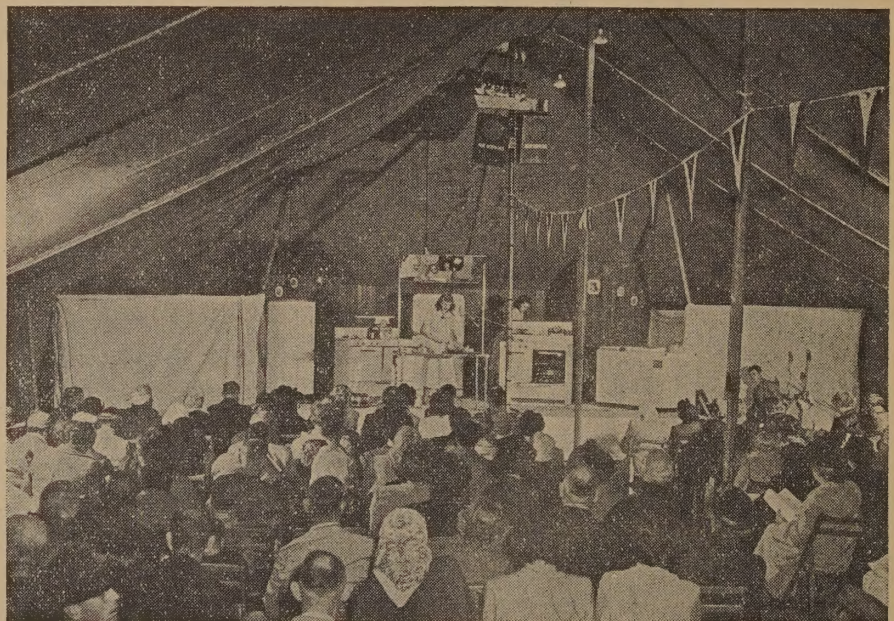
Muddy Trek

"Gov. Williams arrived just before the program was scheduled to start at 2 p. m. and ate a beef sandwich as he plodded through the mud to the tent where he was to speak.

"After the program, the governor visited with Mr. and Mrs. Fredericks and posed with them and their four children for newspaper and newsreel pictures.

"Mr. and Mrs. Fredericks are the owners of the 50-acre farm which was restored to productivity this year after being abandoned for a number of years. Their home, which is open for inspection

(Continued on page 391)



The "Cooking and Freezing School," conducted by Consumers Power Company's home service women, gives a demonstration for a farm audience in the 160-foot circus tent at the celebration of the connection of the Fredericks farm, 100,000th to be electrified in Consumers Power territory.

tion, is completely equipped with modern electrical devices.

FARMERS HAIL POWER AS GREATEST BOON

"Electricity has made a tremendous difference in life on the farm in the past 10 or 20 years.

"You can have the word of farmers who attended the Consumers Power company's 100,000th electrified farm celebration for that.

"Waldo Hoffman, who lives five miles north of Hudson, has seen plenty of changes in farm life, but electricity has made the greatest difference.

"He recalled, as he ate a beef sandwich at the barbecue Thursday, the days when his home didn't even have rural mail service. That was back when he was going to high school in 1897. He used to pick up mail in town for the neighbors along the road.

Biggest Problem

"The biggest problem then was to get water to cool the milk.

"We used windmills,' he said, 'and in the evening when we needed the cool water, the wind would die down.'

"When we got electricity,' he added, 'all of that changed. We had water when we needed it for the milk. Then we got milkers, refrigerators and stoves. It's not like it used to be.'

"Mr. Hoffman isn't active in farming any more but he still thinks of electricity as one of the greatest aids on the farm.

"Maurice Baxter of Pittsford doesn't remember back that far, but he wouldn't want to try to run a farm now without electricity. He has a milker, pump, lights and a number of household appliances. It's cheap power, he finds.

Woman's Angle

"Mrs. Harley Rush, a neighbor of Mr. and Mrs. Cletus R. Fredericks, on whose farm the celebration was held, gave the woman's angle on electricity on the farm.

"She was amazed by a device she saw on display at the celebration—an electrically-powered, automatic chicken feeder. A slowly-moving chain pulled feed from a bin, dragging it along small troughs. The man in charge of the exhibit explained that a time-clock on the motor would turn it off and on.

"That thing would take a lot of work out of farming,' she said.

"But electricity already has done that for the housewife.

"I always wanted to live in town,' Mrs. Rush said, 'so I could have a bathroom. Now I have that and just about everything else I could get in town so I wouldn't leave the farm for anything.'

Disagreeable Features

Mrs. Rush remembers the old coal oil lamps, the hand pumps and other disagreeable features of farm life.

"Now I think I have just about everything,' she said. 'Electric stove, mixer, pump, complete bath, refrigerator, washer, and, of course, we use milking machines.'

"Carl Maute of Grass Lake, a leader in the county 4-H club electrical project, gets a laugh out of references to electric stoves.

"He recalled that when he and Mrs. Maute moved to their farm they had both wood and electric stoves for cooking.

"They always told us,' he said, 'that when you cooked on a wood stove you never would be satisfied with anything else. I think we used that wood stove just once after we got our electric stove.'

Supports Program

"Carl Buskirk of Paw Paw, president of the Michigan Farm bureau, who was a guest at the celebration, offered a thought on the development of the privately-owned power companies in Michigan.

"I certainly wouldn't want to see rural electrification in Michigan entirely in the hands of the government-sponsored companies,' he said.

"Mr. Buskirk has spoken in Jackson and in many other cities of the state on his observation of agriculture in England.

"I have seen what they have over there, with government controls on all phases of farming, and I don't want to see the same thing here. I am glad to see these companies do a good job of rural electrification in Michigan.'

Farm Electrification Day

Ripon, Wisconsin
November 8, 1949

Celebrating the connection of the 100,000th farm to the lines of
Wisconsin Business-Managed Electric Companies and the
25th anniversary of the Ripon Experimental Line.



Members of the Leffel family
watching the connection of
their farm — the 100,000th
served by business-managed
electric companies.

HOW THE BUSINESS-MANAGED ELECTRIC COMPANIES OF WISCONSIN BROUGHT ELECTRICITY TO 100,000 FARMS

With the connection of the Herman J Leffel farm, Route 4, Edgar, Marathon County, Wisconsin, the business-managed electric companies of Wisconsin began serving their 100,000th farm.

On Tuesday, November 8, 1949, with appropriate ceremonies, these electric companies commemorated an important milestone in their program to bring electricity to every farm within their service area.

This program had its real beginning 25 years ago with the erection of an experimental rural line near Ripon -- the second such line to be built in the entire United States.

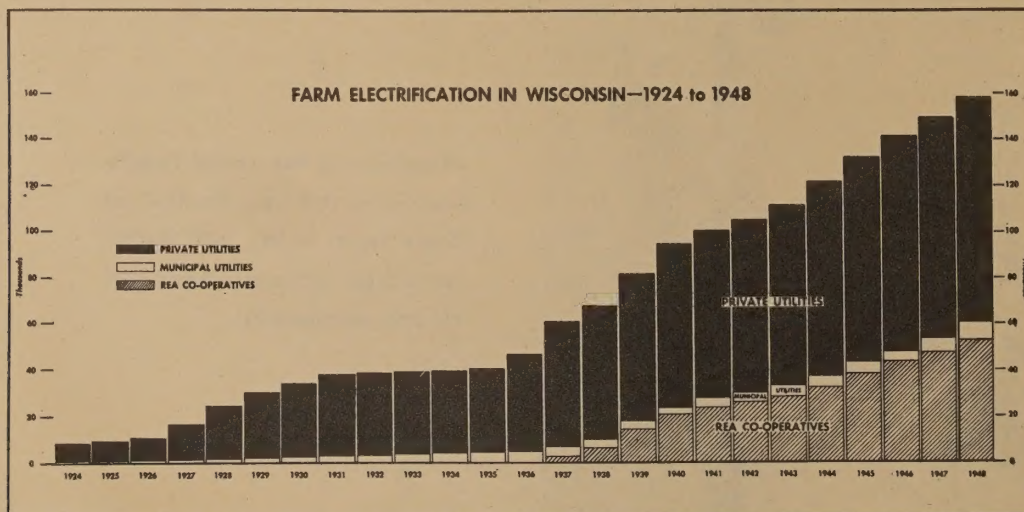
The 100,000th farm commemoration ceremonies were held at Ripon -- as the cradle of rural electrification in Wisconsin.

The events leading up to the connection of the 100,000th farm to the lines of the state's business-managed electric companies covered a quarter of a century, including the country's worst depression and the world's most disastrous war. In spite of these and other obstacles, the electric companies have steadfastly pursued their program until today the final goal is in sight -- electricity for every farm that wants it.

First Step in Farm Electrification

The chart below pictures the progress made year by year in bringing electricity to Wisconsin farms. It shows the number of farms receiving electric service from 1924 through 1948. It also shows the number of farms served by REA from 1937 through 1948.

Note that on December 31, 1925, about 9,300 Wisconsin farms were receiving electric service, and, by December 31, 1929, this number had been increased to over 30,000. This is an increase of approximately 21,000 farms served in a period of 4 years, or an average increase of more than 5,000 farms per year.



During the 20 years prior to December 31, 1925, the utility companies of Wisconsin were busily engaged in extending service to the small communities of the state. For example, in the year 1913, in the territory now served by the Wisconsin Power and Light Company, there were 211 communities that did not have any electric service whatever. There were 48 communities that had dusk-to-midnight or all-night service and no service in the daytime, and there were only 46 communities that had 24-hour service. To take 24-hour service to these towns that had part-time service and to the communities that had no service whatever, required the spending of many millions of dollars in generating stations, transmission lines, and substations. The territory of Wisconsin Power and Light Company was not covered with a network of transmission lines until about the middle 20's. An important first step in farm electrification was to make electric power available 24 hours per day in each urban community, so that all farm lines that radiated from such communities could be adequately energized.

Farm Electrification 1925-1929

Furthermore, the cost of manufacturing electricity prior to 1920 was much higher than it is today, even though coal then cost less than one-half of what it costs now, and labor was certainly less than one-half what it is today. It took about 6 pounds of coal to produce a kilowatt-hour with the old reciprocating engines, and even the early turbines required much more coal than the turbines do today. Now we produce a kilowatt-hour with less than one pound of coal. In other words, the efficiency of generating and transmitting power had to be increased to a point where the cost of electricity delivered to the farmer was low enough so that he could afford to buy it. This condition did not come about generally until the middle 20's.

In 1925, with electricity available in almost every city and village in the state, and with the price per unit of electricity sufficiently low, the utilities undertook to bring electricity to the farms of this state on a large scale. Rural departments were created in each of the utilities. Many agricultural engineers were employed by the utilities. Farm test lines were built, the one at Ripon being the most prominent. Tests were run on this by the University of Wisconsin. Many demonstration farms were developed throughout the state, and an intensive rural electrification program was started at about the end of 1925. This resulted in the big increase in number of farms served from the end of 1925 to the end of 1929. This increase in number is accounted for almost entirely by the activity of the utility companies of Wisconsin.

Unfortunately, late in 1929 the big depression hit, and all expansion and development was brought to a dead stop. The farmers were hit very hard; they did not have money with which to wire their places or buy appliances. The utilities did not have the money to build the lines. So, from the beginning of 1930, for about 6 years, there was very little expansion in the extension of service to farms in the State of Wisconsin.

Post-Depression Activity

By the end of 1935, business had begun to pick up. At any rate, money to finance new construction was a little easier to obtain, so the electric utility

companies of the state picked up their rural expansion program where they had dropped it in 1930 because of the depression. Their activities, and later the activities of REA, gave great impetus to the extension of service to farms.

In 1936, REA was created, and since 1937 has been actively engaged in extending service to farms in Wisconsin.

Since January 1, 1937, both the electric operating companies and REA co-operatives have been building lines and extending service to Wisconsin farms, with the results as shown on the chart. At the end of 1948, the total number of farms receiving service in Wisconsin was 158,500. Of this number, 97,600 were served by business-managed Wisconsin electric companies; 52,900 were served by REA co-operatives, and 8,000 by municipalities.

Business-Managed Companies Serve Two-thirds of State's Farms

It is also of interest to note that during the life of REA, the number of farms connected by Wisconsin utility companies and REA is only at a slightly higher rate per year than was the case in the period from 1926 to 1929, inclusive. The chart shows that, while REA has been an important factor in the extension of electric service to the farms of the state, the pioneering work and the major portion of the actual extensions have been done by Wisconsin business-managed electric companies. REA today serves 1 out of 3 farms in the state, and the utility companies nearly 2 out of 3.

Another thing of interest is that more than 95% of Wisconsin farms either are now using electric service or have it available from a line that passes by the farm. Wisconsin stands high among the states of the nation in farm electrification.

OHIO EXTENSION SERVICE SPONSORS
18TH FARM ELECTRIFICATION CONFERENCE

The Ohio Agricultural Experiment Station at Wooster, Ohio, offered an excellent background for the 18th Ohio Farm Electrification Conference held November 1st and 2nd.

Electric cooperatives, electric operating companies, extension, Ohio State College faculty, experiment station, and manufacturers were represented. The attendance totalled 130.

New electrical uses being tested and old uses with improvements were shown to the group by experiment station people. The leaders of the discussion groups were D C Kennard, Poultry; C F Monroe, Dairying; and Dr R M Bethke, Animal Science. Mr Monroe claims to have the best lighted milk-house, certainly in the state of Ohio, and probably in the United States. Mr Kennard is a firm believer in the lamp brooder but thinks there is a lot yet that we do not know about poultry house ventilation. On the other hand, Mr Monroe says they couldn't do without dairy barn ventilation.

Mr Howard M Call, a farmer from Summitt County, gave a detailed report on how he utilizes electricity on his farm. He claims that the milking machine has been the greatest boon to dairying certainly in his lifetime.

Other subjects discussed were 4-H Club work, teaching farm electrification in vocational agriculture, home pasteurization of milk, up-to-date electric wiring, corn and grain storage, ventilation of farm buildings, and the job of getting electrical equipment to the farmer.

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FARM ELECTRIFICATION SURVEY COMPLETED

THREE-QUARTER BILLION DOLLAR IMMEDIATE MARKET SEEN IN APPLIANCES FOR FARM ELECTRIC CUSTOMERS

Three-quarters of a billion dollars is the value of the immediate market for electrical appliances among American farm families with electric service, according to an estimate based on the results of a sampling survey recently completed by the Edison Electric Institute's Farm Section. At the end of 1949, it is estimated that about 5,000,000 farms will be receiving electric service.

Interviews with 2,377 farm electric customers in 19 states representing every section of the country indicate an average retail market for appliances of about \$150 per customer. The survey, conducted among their farm customers by 26 electric operating companies, covered in addition to the farm families, 293 rural customers not classified as farmers.

The survey shows more than forty different types of electrical equipment are desired immediately, with home food freezers, electric water systems, and electric ranges leading in demand. The survey, projected on the basis of the total number of electrified farms, indicates that nearly a quarter of a billion dollars in retail sales is represented by the demand for food freezers; while over \$90,000,000 would be expended for the pumps alone in water system installations. With 41 per cent of rural electric customers already cooking with electricity, an additional 12 per cent want electric ranges now.

Fourth in demand are electric water heaters, representing about \$70,000,000 in sales for electric appliance dealers. Over \$55,000,000 worth of new electric refrigerators is also indicated, despite the fact that about 85 per cent of farm customers have them already.

The survey also indicated that 36 per cent of farm electric customers cook with wood, coal, oil or kerosene, while 23 per cent cook with bottled gas. Some farms use two sources of fuel. Wood, coal, oil or kerosene is used by 45 per cent to heat water, while 15 per cent use bottled gas.

Since running water is basic for farming operations, detailed questions were asked of those interviewed concerning water systems. Electric water systems are being used by 65 per cent of these customers, with an additional 15 per cent using some other type of system, bringing the total with running water to 80 per cent. In comparison, only 53 per cent of these rural customers had a bath or a toilet, and only 62 per cent were using running water in the kitchen.

The prime consideration in the customer's purchase of a particular water system was the ability of the dealer to install it and provide service. Other pertinent considerations were the water system's mechanical features, price, brand reputations, and capacity.

In number of water systems already sold to those interviewed in the survey, the greater number of sales were made by hardware dealers with plumbers second, and electric appliance dealers third. Of the 1,754 customers having water systems, only 224 had been solicited by the dealer for their business.

DETAILED RESULTS OF FARM ELECTRIFICATION SURVEY

These are the final results of a farm electrification survey made by 26 electric operating companies in cooperation with the Farm Section of Edison Electric Institute. These companies are located in 19 different states. The personal interviews average 102 per company. The total interviews were 2670.

The results are as follows:

1. Do you live on a farm? Yes - 2,377
2. Do you live on a rural non-farm? Yes - 293
3. Do you operate a rural business? Yes - 534
4. How long have you had electric service?

A. Less than one year	133
B. One year to five years	1,203
C. Five years to ten years	431
D. Ten years to fifteen years	483
E. Over fifteen years	420
5. Do you have an electric water system? 1,754 or 65.7%
6. If not, do you have any other type of water system?

A. Yes	14.5%
B. No	22.0%

(Note: Totals 102.2% due to the inclusion of rural businesses in some cases.)

7. If you have an electric water system how old is it?

A. Less than one year	89
B. One year to five years	835
C. Five years to ten years	467
D. Ten years to fifteen years	204
E. Over fifteen years	122
F. No reply	37
8. How many gallons can your electric water system pump in an hour?

A. Up to 200 gal/hr	238
B. 201 gal/hr to 400 gal/hr	1,093
C. 401 gal/hr to 800 gal/hr	243
D. Over 800 gal/hr	70
E. No reply	110

9. In your opinion does your electric water system have enough capacity for your needs?

A. Yes - 1,649
B. No - 105

10. If your electric water system is not large enough, what capacity do you need?

A. 250 gal/hr - 2	F. 600 gal/hr - 15
B. 300 gal/hr - 10	G. 700 gal/hr - 8
C. 350 gal/hr - 6	H. 800 gal/hr - 10
D. 400 gal/hr - 10	I. Over 800 gal/hr - 8
E. 500 gal/hr - 19	J. No reply - 17

11. Check uses you make of your electric water system.
(Note: Per cent based on total number surveyed - 2,670)

A. Bath - 53%	G. Water in Barn - 28%
B. Toilet - 52%	H. Water in milkhouse - 25%
C. Kitchen - 62%	I. Water for poultry - 25%
D. Lawn sprinkling - 24%	J. Water for swine - 10%
E. Garden Irrigation - 16%	K. Water in feed lot - 24%
F. Fire Protection - 40%	

12. Why did you buy your particular electric water system? (One or more were checked)

A. Appearance - 57	G. Brand reputation - 455
B. Compactness - 64	H. Dealer ability to install & service - 682
C. Capacity - 450	I. Dealer solicited your business - 224
D. Price - 488	
E. Mechanical Features - 511	
F. Advertising - 106	

13. What type of dealer did you buy your electric water system from?

A. Hardware - 368	E. Well driller - 171
B. Implement - 211	F. Chain store - 168
C. Plumber - 348	G. Other - 225
D. Appliance - 263	

14. How long after you had electric service did you install an electric water system?

A. Less than one year - 697
B. One year to five years - 546
C. Five to ten years - 203
D. Over ten years - 150
E. No reply - 158

15. What source of energy do you use for cooking?

A. Electricity	- 41%	D. Wood	- 25%
B. Bottled Gas	- 23%	E. Coal	- 8%
C. Natural Gas	- 6%	F. Oil & Kerosene	- 4%

(Note: Total per cent is 107 due to the fact that many farmers use two sources of fuel.)

16. What source of energy do you use for heating water?

A. Electricity	- 34%	D. Wood	- 25%
B. Bottled Gas	- 15%	E. Coal	- 14%
C. Natural Gas	- 5%	F. Oil & Kerosene	- 6%
		G. None	- 1%

17. Do you have an electric refrigerator?

A. Yes	- 2,260
B. No	- 478

(Note: This reflects the use of refrigeration in rural business establishments.)

18. What is the next electrical appliance that you plan to add?

Home Freezer	397	Blanket	5
Water system	331	Air conditioning	5
Range	324	Elevator	4
Water heater	276	Feed Mixer	4
Refrigerator	124	Hot plate	3
Washing machine	104	Poultry scalding	2
Milk cooler	48	Egg washer	2
Ironer	35	Milkhouse heater	2
Milking machine	22	Milk pasteurizer	2
Attic fan	22	Hay hoist	2
Television	21	Toaster	2
Clothes drier	20	Irrigation system	2
Dishwasher	18	Air compressor	1
Shop equipment	16	Garbage disposal	1
Vacuum cleaner	16	Silo unloader	1
Brooder	15	Razor	1
Mow hay finisher	14	Heating pad	1
Barn cleaner	13	Space heater	1
Electric welder	12	Waffle iron	1
Radio	8	Uncapping knife	1
Mixer	7	Electric fence	1
Sewing machine	7	Roaster	1
Feed Grinder	5	Churn	1

ONLY 70 FARMS REMAIN UNSERVED IN CONNECTICUT

As a result of 25 years of close cooperation among the farm bureau and other farm leaders, the electric companies of the state, and the Public Utilities Commission, Connecticut's farm electrification program is now substantially complete. Of the 22,241 Connecticut farms listed by the United States Census Bureau, less than 70 do not have electric service available, according to an announcement today by A V S Lindsley, Vice President of The Connecticut Light and Power Company.

Connecticut is the first of the nation's states to reach substantially 100 per cent rural electrification, after having set the pace for the other 47 states in the percentage of farms electrified for many years.

Two-thirds, or 14,618 of the total farms listed for the state are in the territory supplied with electricity by The Connecticut Light and Power Company. Mr Lindsley states that of this number of farms, all but 35 have electric service available. Of this 35 the owners of 19 were offered service within the last few years but, for various reasons, were not ready to wire their farms. Six of the farms are located in places that are at present inaccessible for line construction, and the remaining ten will have electric lines run to them within the next few months.

Mr Lindsley, who has worked closely with the County Farm Bureau agents and other farm leaders during the last 25 years, has given major credit for the accomplishment to the enthusiastic cooperation of the farm group, not only for the high percentage of farms with electric service available, but also for the far above average use made of electricity in labor saving conveniences on the farm and in the farm home.

He stated that the average electric consumption on farms served by The Connecticut Light and Power Company is twice that of the average for farms located east of the Rockies, according to the latest available published statistics. The statistics for these farms also indicate that the average rate paid by the Connecticut farms is 18 per cent lower than the average paid by the farms served by other business-managed electric companies, and 24 per cent lower than the average rate paid by farms served by Federal Government financed Rural Electrification Administration cooperatives.

Mr Lindsley called attention to the fact that Connecticut's record in farm electrification has been established without financial assistance from the REA or any other federal agency. The same is true for Massachusetts and Rhode Island, both nearing completion of their farm electrification programs.

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AN INVENTORY OF PROGRESS AND SHORTCOMINGS IN
RURAL ELECTRIFICATION EDUCATION IN VIRGINIA

By

Charles E Seitz, Head
Agricultural Engineering Department
Virginia Polytechnic Institute

Presented before the Eleventh Annual Virginia Farm
Electrification Conference, November 15-16, 1949,
at Roanoke, Virginia.

Agricultural engineering education in Virginia was started in 1914 with the employment of an engineer by the Agricultural Extension Service. The Extension Service had been established nationally that year by the enactment of the Federal Smith-Lever Act. The early work of the Extension specialist was in land drainage. Other activities in agricultural engineering were added by 1917. It was in 1920, however, that some extension work in rural electrification was begun in Virginia. One of the Extension projects established that year was entitled, "Domestic Engineering." This project consisted of work in farm water supply and sanitation, farm lighting, heating and ventilation. The work in farm lighting consisted of conducting short courses in farm light plants and making engineering surveys for farm and community hydroelectric plants. Rural electric line extensions for central station service was not then a part of the program. It is of interest to note that V P I conferred its first undergraduate degrees in agricultural engineering in 1920.

Nineteen hundred and twenty-four saw the beginning of the first organized effort at rural electrification, and the start of Extension and research work in this field in Virginia. That year, the agricultural engineering department initiated the organization of the Virginia Committee on the Relation of Electricity to Agriculture, as part of a National movement. This Virginia Committee included representatives from V P I, the State Department of Agriculture, Richmond Chamber of Commerce, leading farm organizations, and power companies. The leading power companies contributed a fund to the committee which was assigned to the agricultural engineering department of V P I to establish a research project, the stated objective of which was, "to determine the optimum economic uses of electricity in agriculture."

Two major activities were included in this study, first, the establishment of a five-mile 2300 volt, single phase, rural line extension serving 30 farms in Henrico county. Five of these farms were selected for intensive study of farm uses of electricity. The second phase of the study was a state-wide survey of all known rural line extensions then in operation, to determine to what extent electricity was being used on farms that had service, and its cost and value to the farmer. The information obtained was published in "A Report on the Status of Rural Electrification in Virginia" in the fall of 1926. The results of this study and similar work in other states provided much of the information that was available on the use of electricity on the farm before 1935. Much credit is due the earlier pioneers in this cooperative

movement, as the results of this work provided the real basis and incentive for the great advances made in rural electrification since 1924.

The results of the field studies proved to the Virginia Committee that farmers could make practical use of electricity both in the home and on the farm. There were, however, many obvious problems to overcome. These included: (1) selling farm people on the idea that they needed and could use electric service; (2) working out practical means of financing rural lines; (3) developing more practical uses for electricity in agriculture; (4) getting farms properly wired to use the service; and (5) getting the proper kind of information and advice on equipment to farmers so that they could derive the maximum benefit from the service.

These major problems were primarily matters that involved educational programs. In recognition of the big job of education and research to be done, the Virginia Committee recommended that the agricultural engineering department develop and expand a sound extension, research and teaching program in rural electrification. Most of you are acquainted with the educational program the department has been conducting since 1926. In spite of limited facilities, progress has been made. In the resident instruction program, stress has been given rural electrification courses. Many of our graduates in agricultural engineering are actively engaged in rural electrification education work with the Electric Service organizations of the state, where they are rendering outstanding service in their work with farmers on electric uses on the farm. The first agricultural engineer so employed was in 1928. Others are engaged in extension, research and teaching work with the College. Service courses in rural electrification have been available to agricultural students in other curricula. The training of vocational agricultural teachers in rural electrification has been particularly valuable.

In our research program, we have conducted numerous studies to find new and better ways of using electricity on Virginia farms. The research work in hay drying is a good example of one of the accomplishments of research.

In our extension program, through such means as short courses, meetings, farm demonstrations, publications, the radio and press, improved uses of electricity have been carried directly to the farmers of the state. Numerous in-service short courses have been held for the training of rural service workers and a 4-H Club program in rural electrification has been started.

The major "bottleneck" back in 1926, in the expansion of electric service to rural areas, was the lack of any uniform or set policy of the Power Companies for making rural line extensions. In those days, rural applicants were often required to pay the entire cost of the extensions. In an attempt to solve this major problem, Governor Byrd called a conference in February 1929 of farmers, utility and state representatives interested in rural electrification. As an outgrowth of this meeting, the Governor appointed what was commonly known as the Governor's Joint Committee on Rural Electrification. This committee developed a uniform plan for making rural extensions which was adopted in 1929 by most of the power companies operating in the state. More than 10,000 Virginia farms received electric service under this plan before 1935.

The creation of the Rural Electrification Administration in 1935 gave great emphasis to farm electrification in Virginia. Our Extension specialists and county agents gave considerable assistance in organizing REA cooperatives and also helped the utility companies promote the extension of rural electric lines. Due to the REA projects and the enlarged efforts of the power companies, the number of farms connected to high line service increased rapidly. By 1936 some 17,500 farms were connected. By 1941, the figure had jumped to 45,000. Even during the war years, about 20,000 additional farms were connected for service. Despite critical shortages of materials and labor in the post-war period, outstanding progress has been made by the electric service organizations in extending services. According to the October 1949 release of the REA, Virginia has 146,617 or 84.7% of its farms connected, with 26,434 not yet receiving service. Compared to the 500 farms which were connected in 1925, I am sure you will agree that truly remarkable progress has been made in extending electric service to our farms. The electric service organizations in Virginia are to be congratulated on the outstanding job they have done in getting service to farm people.

Another important milestone in the progress of rural electrification particularly the educational phases, with which we are directly concerned, was the organization of the Virginia Farm Electrification Council. In 1940 a farm electrification educational committee was formed. It was composed of three representatives -- one from the power companies, one from the REA Cooperatives, and one from the agricultural engineering department at V P I. This small committee sponsored state-wide educational programs. It encouraged the support of all agencies and organizations interested in farm electrification. The results are quite effective.

It was this small committee that conceived and fostered the organization of the Virginia Farm Electrification Council in 1945. Its founders visualized an organization that would provide a unified approach to the research and educational problems involved. They also prescribed that the Council would not supplant or replace any existing organization, but that it should afford a medium through which a coordinated and expanded program could be developed. Membership in the Council includes representatives from the state agencies interested in agricultural development as well as the leading farm and electric service organizations. The work of the Council is broad and varied. The organization makes it possible for all interested groups to work together on a common program. Through this coordinated approach to the problem, genuine progress is being made. Yet, the accomplishments are insignificant when compared with the big job that must be done. The efforts of all member agencies and organizations must be expanded if the desired measure of success is to be attained.

I believe that we have reason to be proud of the progress that has been made in rural electrification in Virginia. We have always ranked with the leaders in the southern group of states in percentage of farms with electric service and in the use of that service on farms. We would, however, be shortsighted and foolhardy if we did not study the educational job we are trying to do with the idea of finding our weaknesses and trying to overcome them. Let us, then, briefly consider a few of the things that are of vital importance in making our educational efforts effective.

One of the responsibilities of an electric service organization is to give advisory service to its consumers. Agricultural engineers and home economists, with adequate electrical training, are best suited for such work with rural people. Although electric service organizations serving Virginia now have some 35 agricultural engineers and about an equal number of home economists in their employ, most organizations are woefully understaffed. Some have no personnel with proper training for doing the necessary educational and advisory work with the farm customers they serve.

The employment of sufficient qualified rural electrification personnel for educational work by all electric service organizations is of vital importance in accomplishing the job now before us. While there has been a shortage of such personnel in recent years, this situation is now changing for the better. I hope that those organizations needing this type of personnel will be able to employ them in the near future.

One of the real bottlenecks that is hampering the use of electricity on farms in Virginia is the lack of adequate wiring. Too many of our farms have two-wire service entrances; three-wire service that is of inadequate capacity; transformers located too far from the meter; meters located in the wrong place; inadequate service entrances at buildings and just plain poor wiring systems. I doubt if anyone has the complete answer to the farm wiring problem. It is certainly a serious problem, both from the standpoint of the power supplier and the farmer. Hundreds of wiring meetings have been held for farmers who were about to receive electric service. Undoubtedly, these meetings have done a lot of good. It is not reasonable to assume, however, that a two-hour meeting on "how to plan your wiring system" is enough to give a farmer all the information and help he needs in order to assure him of getting a wiring system installed that will adequately serve him. Farmstead arrangements differ, the nature of the prospective electrical load is different; and many other factors that enter into the planning of a wiring system are such that it is necessary for each farmer to have individual assistance. In addition to the general wiring meeting that the farmer has attended, he must have a qualified person study his situation with him, plan the wiring layout, and get it installed by a competent electrician.

How far have we gone toward seeing that farm consumers had this kind of assistance on wiring? Probably a fairly high percentage of them had the opportunity to attend a general wiring meeting. In some areas, limited numbers of farmers have received some individual help on planning. As to the kind of job most of the electricians have done, I am afraid that in most cases the rule has been to get some kind of a job installed that would pass inspection, if one was required, get the farmer's money, and check out. In most cases the wiring contractor cannot be blamed for the inadequacy of the job he installed. He usually does what the farmer or someone else tells or allows him to do. I believe that there are very few contractors who do farm wiring in Virginia that are really qualified to plan and install the most practical system for a given farm.

Many of you are probably thinking that this is a poor time to talk about wiring, now that 85 per cent of our farms are already wired. You are certainly justified in thinking that, but perhaps the old adage "better late than never" applies here. Unfortunately, an electrical conductor never

increases in capacity, once it is installed. Which means that where inadequate wiring exists, sooner or later it will have to be replaced as the use of electric service demands it. Whenever that occasion arrives, there is an opportunity to help that farmer avoid making the same mistake again. I believe that one of the most glaring shortcomings in our work on farm wiring has been the lack of working with wiring contractors. Certainly the contractor is one of the key links in the chain of requirements for getting the correct wiring installation. We know from limited experience that it is difficult to plan a program for wiring contractors that will appeal to them and produce the results we desire. I am sure that all of you are looking forward to the discussion of this topic later today.

One of the most important phases of our educational program in rural electrification should be the work with rural youth. Some progress has been made in this field since the Council was organized in 1945. Generally speaking, however, we have really missed the boat by not paying more attention to an educational program for 4-H club members and students of vocational agriculture and home economics. The 85,000 rural youth enrolled in these activities will become the farm and rural home leaders of the state within a few years. Their organized training programs are planned to give them instruction on fundamentals and modern practices that will enable them to be successful in the business of farming. The role of electricity in the production, processing, and utilization of agricultural commodities is rapidly increasing in importance. It is therefore obvious that a well rounded training program for farm youth will include some information on electricity and how it fits into modern farming practices and rural home making. We know from experience that it is not easy to get the subject of electricity included in these training programs. The 4-H Club agents and teachers who direct the programs at the local level do not have the necessary fundamental training to enable them to do the job without outside assistance. Suitable subject matter and teaching materials are not available for the agents and teachers. Some progress is being made in the training of personnel and the preparation of materials, but it is a slow and difficult process.

Here again, the trained personnel of the power suppliers have an opportunity, and I believe an obligation, to render valuable service. The agents and teachers need their assistance and guidance in working with rural youth on electrical projects. In fact, there will be very few instances for years to come where electrical project work will be effective without some of this type of assistance. Equipment dealers also have a stake in this type of program and should give some assistance in the form of loaning equipment, and in some cases supplying leadership. If our rural electrification program for rural youth is to grow in scope and effectiveness, specialists and supervisors at the state level, agents and teachers at the local level, power supplier personnel and local dealers will all need to cooperate, with each individual doing the job assigned. Until everyone concerned realizes this, I am afraid that progress will continue to be slow and perhaps inconsequential.

Another situation that has limited our educational progress in rural electrification is the lack of factual information from research and field studies. Electric service organizations now have over 100 million dollars invested in facilities to serve rural Virginia. Our farmers have

additional millions invested in electric wiring and equipment on the farms of the State. Prior to 1940, almost no money was available for research or field studies to develop and improve equipment for using this service on farms. Public funds that are now being made available are woefully inadequate to do the research and field studies that are needed. It is important that what money is available be used where it will do the most good. Power suppliers, and farm organizations can help strengthen our research and field studies work in several ways. You are in the field on the farms and can observe first hand problems that need to be worked on. It will be very helpful if you will call these problems to the attention of those who do the research work. We need and must actually have your assistance and cooperation in making field studies on farms. Facilities for doing this work are very limited and cannot be expanded until more funds are made available. Your support in this direction is also needed if we expect to get anything like adequate funds for carrying on the work.

It is evident that very few manufacturers and distributors of farm electrical equipment are doing an effective job of training dealers to properly sell, install and service equipment. In too many cases it is difficult and inconvenient for the farmer to buy and get equipment installed after he discovers that he needs it. Many items such as water systems, hay driers, and heating installations must be designed and installed to fit a given set of conditions. Local suppliers of the equipment should be able and willing to render that service to their customers. I believe that one of the major difficulties in getting more electrical equipment on farms will be removed when more of the dealers learn to know and service the equipment they sell.

In the past, some of our educational leaders and power suppliers have not recognized the need for an educational program for farm people on the use of electricity. Some of them thought that rural electrification consisted only of extending the power lines into rural areas to make the service available. I hope that none of our leaders and power suppliers feel that way today. I doubt if any of us know how long ago it was that some one figured out a way to manufacture fertilizer. Today farmers can buy fertilizer locally from many supply sources. Even though this is true, our experiment stations are busier than ever trying to discover more effective ways to use this production tool, and all of us will agree that this should be done. County agents and agriculture teachers spend much of their time advising farmers about the use of fertilizer to increase production and the fruits of their labor. Isn't electric power a tool of production on the modern farm in just about as true a sense as is fertilizer? All one needs to do to get the answer to that question is to ask a modern farmer who is really using electricity.

Our job of education in rural electrification is a big one. I believe that we have learned by now, that to get the job done effectively, we must have a coordinated program of all agencies and organizations concerned. I say this, because where the job is being done effectively, there had been coordination and cooperation among every one concerned. Where three groups or agencies are concerned in doing an educational job, the effort usually fails if even one of the three fails to carry out the part of the job assigned. I hope that each of us will try to discover our weak points, as the discussions progress through this conference, and at the same time pick up some ideas on how to overcome them. If we will do that, each of us can do a better job and our over-all educational program will go forward.

Tentative Program

NATIONAL FARM ELECTRIFICATION CONFERENCE

December 20, 21, 22, 1949

Stevens Hotel, Chicago, Illinois

THEME - Electricity in Today's Farm and Home Planning.

OBJECTIVE - "To bring together in conference individuals and groups interested in raising farm living standards and reducing costs by increasing the profitable uses of electricity on farms."

REGISTRATION - \$3.00

Tuesday, December 20 - 7:00 to 8:00 P M

Wednesday and Thursday, December 21-22, 8:00 A M

Lower Tower Room

CONFERENCE LUNCHEON, Hotel Stevens, Thursday, 12:15, December 22 - \$3.50

Meetings to be held in Tower Room -- 25th floor.

TUESDAY EVENING, DECEMBER 20, 1949

Presiding - L R Emmert, East Pittsburgh, Pa, Manager, Rural Electrification,
Westinghouse Electric Corporation, Conference Program Chairman.

8:00 - FARM FAMILY MEETING

This program will be a sample farm meeting utilizing new movies, visual aids, and demonstrations. Not all elements will be new to all in attendance but everyone will get some new ideas and information.

Not all of the available, excellent visual aid material can be worked into one short program. Therefore, arrangements have been made for the display of information or leaflets describing films and demonstrations, as well as educational bulletins available from the colleges and commercial organizations. If you have applicable material which you would like to display, send samples to Mr H C Rutt, Public Service Company of Northern Illinois, 72 West Adams St, Chicago 3, Illinois, who is chairman of the Exhibit Arrangements Committee.

WEDNESDAY, DECEMBER 21, 1949 - MORNING SESSION

PRESIDING - H P Rusk, Chairman of the Conference

10:00 - PURPOSE OF CONFERENCE

H P Rusk, Dean and Director, College of Agriculture,
University of Illinois.

10:15 - "The Impact of Labor Saving Devices in Agriculture"

Dr P H Sanders, Richmond, Virginia, Master of Virginia State
Grange and Editor of the Southern Planter.

10:45 - "Should the Farm Family Plan a Better Life?"

11:15 - "Let Industry and Agriculture Plan Together"

John W Ticknor, New York City, Asst to President,
National Farm Chemurgic Council.

-- AFTERNOON SESSION

PRESIDING - H P Rusk, Chairman of the Conference

2:00 - "Electricity in our Farm Management Planning"

B G Perkins, St Louis, Missouri, Doane Agricultural Service, Inc

2:30 - "The Individual Farm Family Needs Information to Plan"

Hassil E Schenck, Indianapolis, Indiana, President,
Indiana Farm Bureau, Inc

3:00 - RECESS

3:15 - ROUND TABLE DISCUSSION, "Getting Information for Planning to the
Farm Family"

Moderator : Kenneth F Warner, Washington, D C, Extension Specialist,
U S Department of Agriculture.

Proponents of the use of Radio, the Press, Informational Bulletins,
Films and Television, Demonstrations and Exhibits, and Personal Contact will
attack one simple bit of information. Samples of each medium will be used
and their relative merits will be thoroughly debated.

-- EVENING SESSION

8:00 - OPEN FORUM

Moderator - Geo W Kable, New York City, Editor, ELECTRICITY ON THE FARM
MAGAZINE, 24 West 40th Street, New York 18, N Y

This will be an informal, free discussion session. Anyone wishing
to discuss a subject in line with the objective of the conference will be
given an opportunity. If you have subjects you wish to have discussed,
send them to George Kable or bring them with you to the conference. This
may be the chance to get the specific information you hope to carry away
with you.

THURSDAY, DECEMBER 20, 1949 -- MORNING SESSION

PRESIDING - Titus B Schmid, Dubuque, Iowa, Crescent Electric Supply Co,
Vice Chairman of the Conference

9:30 - "The Challenge to Inform, to Sell, and to Service"
A M Young, Chicago, Illinois, Sales Analysis Institute

10:00 - PANEL DISCUSSION "Getting Electrical Equipment to the Farmer"

Chairman: F E Watts, New York City, Executive Assistant
FARM JOURNAL

This most important problem will be explored by a farmer, an extension service worker, power supplier representatives, a dealer, distributor and manufacturer.

11:15 - DISCUSSION

11:30 - CLOSING OF THE CONFERENCE - Dean Rusk

12:15 - CONFERENCE LUNCHEON.

PROGRAM COMMITTEE - L R Emmert, Chairman.

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UTILITIES' PLACE IN AGRICULTURAL AND INDUSTRIAL DEVELOPMENT

By

R Baxter Wilson, Vice President
Mississippi Power & Light Company
Jackson, Mississippi

Before General Sales Conference, Southeastern Electric
Exchange, Atlanta Biltmore Hotel, Atlanta, Georgia
October 28, 1949

The first and most important point I would like to make on this subject is that it is not a question of "can the utility companies afford to take their place in agricultural and industrial development?" but rather can we afford NOT to take our place in agricultural and industrial development in the areas in which we serve. There are two main reasons why we, as utility companies, must take our place in these types of development programs:

FIRST - To secure our investment and assure a continued development of the area we serve, we must show a healthy increase in new industries, new agricultural processing plants, new markets for all types of commodities, and a higher per capita income. This is essential if we are to maintain our American system of free enterprise and stop socialism, nationalism or statism from taking possession of this country.

SECOND - Public Relations. We can expect to serve our respective areas only so long as the people in these areas want us to serve them. That desire will come primarily from good public relations, and one of the best tools for earning good relations is effective agricultural and industrial development programs.

Utility's Responsibility in Territory Developments

Unquestionably, as we face the future in a world trending toward statism or socialism, it is mandatory that business managed utilities must not only sell the public on the dependability, economy and value of their services, but must also emphasize the role they play as good corporate citizens, interested in developing the areas they serve. If America is to maintain its high standards of living, industry and agriculture must create new jobs with increasing new opportunities for all our people.

The electric utilities are in an ideal position to take an important place in territorial expansion and development. It is good business to not only serve the public but also to do its part toward creating maximum employment and prosperity.

Selfish Interest

Since our investments are in generating stations, lines, substations -- well anchored and cemented into the good earth -- it takes no mathematical formula to figure out that utility companies can expect to grow and prosper only as the areas they serve grow and prosper. An area limited by geographical boundaries will grow only in direct proportion to the development of its agricultural industry and to the extent it wisely utilizes its natural resources.

If it is selfish to say that we want to see our areas develop agriculturally and industrially in order that our companies may grow and prosper, then I am selfish and I will continue to look at our place in agricultural and industrial development from a selfish point of view, but I think it is a good point of view and that we should make no bones about our selfish interest. The man in the street can understand that language.

The Southeastern Electric Utilities are Taking Their Place in Development Today

In the southeastern area that is admittedly a low income area and at one time was labeled as America's No. 1 economic problem, the utility companies are expanding at an unprecedented rate. Our companies are building systems comparable to the utilities of the northeast and midwest -- those areas that are already highly industrialized and have higher per capita income.

I am only indirectly responsible for the development program we carry on in our company, but I am right in the middle of our expansion program, and the money being spent by our company makes me "tremble in my boots" However, when I look at the expansion of the electric industry as a whole, I get dizzy.

Total electric utility plant investment reached sixteen billion dollars in 1947. We spent over two billion dollars on new construction in 1948, and will spend about as much in each of the next three years. This is the largest expansion program of any industry in the country.

I have to think in terms of our company. I know that our plant valued at over fifty-four million dollars in 1947 will reach a value of over ninety million dollars in 1952. I know that all the utility companies represented at this conference have approximately the same type of expansion programs.

The utilities in this area took care of their obligations during wartime years by never "being too little or too late" and I am sure that each of you feel as I do that we must always be in a position of being ready to serve when the need arises. This is the only manner in which we can take care of the future growth of the areas.

But at the same time I am sure all of you have heard of fixed charges and in terms of our company we cannot meet these charges on twice the capital investment unless revenues go up proportionately. It is obvious that we must all increase our revenues. Of course, the quickest, easiest, most economical way to increase revenues is to get greater customer utilization of our services. The higher incomes which result from sound

industrial growth or agricultural development naturally make a better market for our service. I would like to cite an example of how agricultural development has brought about greater customer utilization in our industry.

Four of our northwest counties have the largest kwhr consumption per customer in our territory. These four counties are the largest dairying counties in our area. They are large users of electric service. We have several low kwhr consumption areas in our territory that have just as good, if not better, natural advantages for dairy production as these four counties. We have the markets in Mississippi. We are using more dairy products than we are producing. This is illustrative of the effects of agricultural development on utility revenues and shows what can be done in developing an area. Our opportunities are just as great in poultry and beef cattle production. From a crop standpoint, we can greatly increase production of vegetables, soybeans, small grains and rice.

One of the greatest opportunities that comes from increasing our agricultural production is the establishing of agricultural processing plants. According to one of the leading agricultural authorities, producers of raw material received from about 1/6 to 1/4 of what that product ultimately brings when it reaches the ultimate consumer. The more products that are processed at home, the more the consumers' dollar will be retained in the area which, of course, goes a long way toward raising the per capita income in that area and providing the purchasing power for the people to buy electric service and other products and services.

One of the largest poultry processing plants in the south is in our service area and was developed via the production route. The owner began financing farmers to grow poultry in a small way a few years ago. Today he is handling over 200,000 pounds of poultry products each week.

Locating outside industry (Industry financed outside of our area) is another means of increasing revenues and of meeting carrying charges on our increasing investment.

The expense and effort spent to contact and sell outside industry on locating in our area, may at times seem too costly especially when the net income from the industry itself is negligible. However, the real benefits received from an industrial load of this type come largely from the increased residential and commercial use of our service at rates far more compensatory than industrial tariffs. Thus increased industrial activity resulting from new payrolls pays substantial dividends to those helping to locate new industry.

Locating and developing new customers on our existing lines is another good way to help meet carrying charges on increased investment. Increased agricultural income and additional industrial payrolls in turn, mean more people, more stores, more service establishments, more churches and more schools -- and more kwhr sales on existing lines and in many cases, to present customers -- especially low use customers.

Serving new areas is probably the greatest problem that confronts all utility companies but is a job that must be done. We must take the lead in serving areas that are not now receiving electric service. The remaining

areas to be served are largely submarginal areas and I can see but two approaches to this task:

1. Develop these areas as much as possible from an agricultural and industrial standpoint in order that they will not be sub-marginal areas and uneconomical to serve.
2. Lower cost construction for serving these areas. This may be the easiest way out. Certainly, they present a challenge to our engineers to design low cost construction for serving submarginal areas.

Along with the Problem of Carrying Charges, and Additional Revenue to Pay for these Charges comes -- the Problem of Borrowing Money -- Financing

The utility business is a continuous cycle of borrowing money, building, operating, selling, and paying interest. Borrowing money is always a problem and investment bankers may enjoy your hospitality but when you get around to the question of the money you want to borrow, they always ask you about your collateral and can you earn a return on the financing needed. Dealers in investment capital do not like "ripe apples". "Ripe apples" always drop off the tree. They are more interested in how you are growing, expanding, developing, and the economic trends of your area. Dealers in money must be experienced in making investments, and rightfully so. They are charged with investing the savings of trust funds, widows, insurance policy holders, and many people with life-time savings. The socialistic trends of today are having and are going to have a greater influence on investment capital. The battle lines are drawn with many industries and professions today.

Before we can attract more equity capital and compete with other industries -- the automobile industry, the steel industry, the chemical industry, etc -- we are going to have to prove to investors in securities that we can:

1. Operate efficiently and earn a fair return on invested capital.
2. That the areas we serve are showing a healthy increase in
 - a. agricultural and industrial income
 - b. new industries, new homes, more service establishments.

Recently we had a group of investor's analysts visit our area. These men were not so much interested in our generating plants, substations and offices -- instead, they were keenly interested in the resources of the area, the growth of the area, how the people made their living, what was the attitude of the public toward the company and toward all private business.

Most of our companies are now in the middle of long range construction programs for which all of the financing has not been completed. Our ability to get needed new money on favorable terms depends upon the reaction of these analysts who regularly visit all our service areas.

Agricultural and industrial development is a long range program. It does not take a valley authority to do this job. It cannot be done single-handed. It must be done by the people, agencies and organizations within the local area. The utility company can spearhead the program. I would like to mention a few of the agencies and members of our development team in Mississippi.

We have a close working relationship with the agricultural agencies in our state. We interchange information as needed to develop agricultural production and the processing industries. At the present time, we are sponsoring several joint projects with the Mississippi State Extension Service, Mississippi Experiment Stations, Forestry Service, and other agricultural agencies.

We know the youth of today will be customers tomorrow. We sponsor through the Mississippi State Extension Service a 4-H Electric Club program on a state-wide basis. There is no direct revenue from this program but boys and girls in the impressive ages between 14 and 21 are reached -- getting some idea of what electric service can do and what private enterprise is doing for them.

A fair-minded state government is essential to the development of both agriculture and industry. We have a state sponsored and financed development program in Mississippi. Our Mississippi Agricultural and Industrial Board is responsible for this state development program. It is dedicated to the sound development of agriculture and industry. We have a company representative on that board and have a part in developing the plan of action carried out by this board.

As a member of the Middle South system, we also take a part in the Middle South Utility Development program. This is a joint program designed to advertise on a national basis the resources and advantages of our three-state section of the country.

I will not dwell at length on the methods and procedures employed by our company in the agricultural and industrial development because every company has its own individual problems. We do, however, have a development program for agriculture and industry in our company that can be summed up as follows:

1. Our program is spearheaded by the Sales Department, but this job cannot be done by our sales department alone. Every employee must be alert to the possibilities for development of the local area in which he works and lives.
2. We must sell the need for agricultural and industrial expansion -- that is, sell our organization and the people of our communities on the need for development before trying to sell a prospective industry.

3. Educate local community interests in the benefits to be derived from agricultural and industrial development.

4. Analyze the local areas according to the natural resources and assets of the area, then work toward locating industries and processing plants, and developing agricultural markets that can utilize these resources.

5. Assist present industries.

6. Acquaint the communities we serve with factors that industries consider when seeking a location.

7. Develop favorable community attitudes and leadership.
An industry does not locate where it is not wanted.

8. Contacts -- Continually contact our

- Local communities
- Prospective industries
- Market outlets

We do this by direct mail and personal contact or interview.

9. Helping Build Mississippi Club

When everyone is talking about how fine something is, and how much an area is doing and the natural resources within the area, you are bound to attract attention. I point out Texas and Texans as an example of what I mean. Our Helping Build Mississippi Club, as organized by Mr Rex Brown, is simple, has no by-laws or constitution, no initiation fees or membership fees. To be a member of this organization you merely sign this pledge:

"In the belief that the future course of Mississippi's progress and prosperity is shaped by the attitude and activities of Mississippians everywhere, I do earnestly and solemnly pledge myself --

"to be diligent and alert to share in the work of helping build Mississippi;

"to take advantage of every opportunity to boost Mississippi wherever I go within or without the state;

"to become more familiar with, and be proud of the history and traditions which forged lands and people into this great commonwealth;

"to seek out the particular ways by which I can be an integral and valuable part of Mississippi's progress;

"to assume my full share of civic responsibility to promote progress in Mississippi;

"

"to take up the reins of leadership, when called upon, in worthwhile projects of benefit to my community, my state and my neighbors, and to cooperate in every way with others of like mind when leadership is in other hands;

"to be a good will ambassador, salesman and booster in our great common task of making Mississippi a better place in which to work, live and prosper;

"to enlist the active support of other Mississippians in the never-ending task of helping the forward march of Mississippi progress;

"and to think, work and live Mississippi to the end that I will have helped, to my fullest capabilities, to build a greater, stronger, better Mississippi for my neighbors, myself, all Mississippians, and for the generations yet to come."

To keep all club members up to date with what has been done in Mississippi with facts about the State, we publish this monthly paper:

-- SHOW PAPER --

In our area and in your area, there are many outstanding advantages and many natural resources that could be developed by our own people, but as is the case in many things, these resources are so obvious that we often fail to see them. We use this paper as a medium for pointing out development projects and announcing the various types of prospective industry that we have contacted.

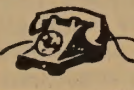
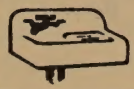
This club is nothing more than a vehicle to unify our efforts into a working force of communities, industries, and individuals with the specific objective of working together to develop our state agriculturally and industrially.

Conclusion

In conclusion, I would like to say that I have attempted to point out only the highlights on this subject. I do, however, wish to remind you again of the point I stressed in the beginning -- that is -- WE AS UTILITIES CANNOT AFFORD NOT TO TAKE OUR PLACE IN THE AGRICULTURAL AND INDUSTRIAL DEVELOPMENT OF OUR RESPECTIVE AREAS. WE MUST work with all forces for a strong and growing economy in our respective areas if we are to prevent the spread of socialism. In my opinion, the utilities' aggressive leadership in agricultural and industrial development is the American system in action.

HOW LIVING DIFFERS IN RURAL AND URBAN COUNTIES



Living Items	* Counties with Farm Population of:				
	80% & over	60%-80%	40%-60%	20%-40%	Under 20%
 Births in Hospitals 1946	28%	47%	69%	81%	93%
 Hospital Beds per 100,000 Population 1946	45	131	231	359	432
 Physicians per 100,000 Population 1946	31	44	57	73	112
 Dentists per 100,000 Population 1946	10	19	30	38	60
 Adults with 5 or More Years of School 1940	65%	74%	83%	86%	87%
 Adults Who Have Completed High School 1940	10%	14%	20%	23%	27%
*  Farm Dwellings with Electricity 1945	19%	27%	44%	56%	68%
 Farm Dwellings with Telephone 1945	6%	17%	34%	36%	42%
 Farm Dwellings with Radio 1945	49%	61%	70%	73%	75%
 Farm Dwellings with Running Water 1945	7%	11%	21%	32%	47%

BAE 47387-X

Editor's Note: According to the Edison Electric Institute, 74.9% of all farms were being served with central station electric service December 31, 1948.

Farm Living Varies

With Distance to City

THE FARTHER farmers live from the city, the lower their level of living is likely to be.

This is one of the main conclusions of a recent study of the Bureau of Agricultural Economics. It was made to find out just how adequately the needs of farm families with respect to health, education, household facilities, and living conditions generally were met in the 3,071 counties of the United States.

Some of the results of the study are shown in the table on the opposite page. It shows that the larger the proportion of farm people in a county, the fewer are the modern services and conveniences that are likely to be available to them.

Lack Medical Facilities

The availability of modern services and conveniences in rural communities determines to a large extent the level of living of farm families in those communities, regardless of their income. For example, for each 100,000 population in the most rural counties of the country in 1946—those in which farm people made up 90 percent or more of the population—there were only 29 physicians, 8 dentists and 20 hospital beds. One hundred counties in the United States did not have a single medical doctor while 897 did not have a general hospital.

In the most urban counties, on the other hand, there were 120 physicians per 100,000 population, 64 dentists and 396 hospital beds. Of the 120 physicians in these counties, 53 were specialists. There were no specialists in the most rural counties.

Clearly, farm families living in counties where the number of physicians, dentists, and hospital beds is low are definitely limited in the improvement which they can make in their health situation even though they greatly increase their incomes.

Medical attention at birth and the use of hospital facilities for confinements are closely related to the number of doctors and hospitals available. In the most rural counties, only a little more than a fourth of all births in 1946 occurred in hospitals compared with 94 percent in the most urban counties. The proportion of births attended by physicians ranged from only two-thirds in the most rural counties to practically 100 percent in the most urban.

Although the use of medical care at time of birth is still much lower in rural than urban counties, rural areas have made considerable progress in recent years. Since 1937, the rise in the proportion of births in hospitals has been more marked in rural areas than in urban where it is approaching 100 percent.

Education is another field in which rural communities have been at a disadvantage compared with cities. In rural counties, teachers' salaries generally are low, school buildings inferior and the number of pupils per teacher high. In the most rural counties of the country, only 8 percent of the population 25 years or older have completed high school compared with 27 percent in the most urban counties. Many more adults also have had 4 years of college in urban communities than in rural. At the other end of the scale, a slightly larger proportion of farm people than city people have had no schooling.

Lag Despite Gains

Farm homes still lag far behind city homes in the use of household facilities such as electricity, telephones, radios and running water despite considerable gains in the last several years. Furthermore, the larger the proportion of farm people in a county's population, the fewer of these facilities that are likely to be found in farm homes. (See table on p. 2.) This also is true of many

community services such as retail and wholesale establishments, barber and beauty shops, cleaning and pressing shops, laundries, automotive repair and service shops, circulating libraries and eating and drinking places.

One of the most important trends is the striking decrease in the number of general stores in rural communities along with the increase in retail food stores and filling stations. This points to a rising standard of living among rural people which is calling forth increased specialization on the business side of the community. However, the highly rural counties still are far from being equal with the more urban counties in this respect.

On practically all items covered in this study the situation is unfavorable for farm people living in counties where they make up a large proportion of the population. These differences in rural and urban levels of living are not due so much to the fact that these people live on farms but rather to the fact that they live a distance from cities. Many of the services and facilities en-

tering into modern standards of living require a fairly high degree of community organization, either private or public. This is obviously true for educational and health facilities. It is equally true for many facilities used in the farm home. For instance, whether or not a farm housewife uses an electric iron depends on whether the farm is supplied with electricity. This in turn depends on whether there is an organization in the community able to supply electricity.

Community services in cities are much more developed than in rural areas and farmers living near cities usually benefit from them. Farmers living in more rural areas are unable to acquire these services until the proper community organizations have been established. Thus, the way to better conditions of life for farm people and to bring about parity of living with city people may lie in improving their local community organization.

T. Wilson Longmore
Grace L. Flagg
Bureau of Agricultural Economics

Courtesy of Bureau of Agricultural Economics,
U S Department of Agriculture.

OHIO POWER COMPANY'S
RURAL CUSTOMER ELECTRICAL EQUIPMENT SURVEY

TOTAL				
<u>Equipment</u>	<u>Equipment in Use</u>	<u>Saturation</u>	<u>Equipment to be Added Next 12 Mos</u>	<u>Sales After 20 Days</u>
Washing Machine	23,249	87.40	874	257
Iron or Ironer	25,057	94.19	337	129
Clothes Drier	86	.32	78	13
Water Heater	7,990	30.04	2,236	591
Range	13,477	50.55	1,475	546
Roaster	2,376	8.93	234	53
Refrigerator	19,575	73.58	1,815	480
Home Freezer	2,415	9.08	1,306	248
Radio	26,175	98.39	337	188
Stoker or Oil Burner	1,346	5.06	186	19
Water System	12,430	46.73	1,589	300
Brooder	4,724	17.76	937	220
Barn Ventilation	84	.32	44	8
Milking Machine	2,126	7.99	330	97
Milk Cooler	818	3.07	306	128
Dairy Water Heater	755	2.84	306	92
Feed Grinder	302	1.14	144	15
Feed Mixer	94	.35	59	5
Elevator or Conveyor	647	2.43	167	38
Hay or Grain Drier	126	.47	113	52
Stock Tank Heater	385	1.45	190	37
Welder	363	1.36	218	37
Motor 1 hp and over	2,678	10.06	599	144
Miscellaneous (Equipment other than listed on Questionnaire	6,139	23.08	397	290
TOTAL	153,415	-	14,281	3,987
QUESTIONNAIRES MAILED	50,606			
CARDS RETURNED	26,695	% RETURN - 52.75		

This survey mailing was made to all Domestic Customers (Farm and Non-Farm). The first 11 items and item 24, which includes a variety of miscellaneous small household appliances, covers equipment used by both the farm and non-farm customer; however, items 12 to 23, inclusive for the most part covers only equipment used by the farm customer. In making this mailing and tabulating the returns no attempt, except in one division, was made to keep a separate breakdown, therefore, the percentage of saturation, based on the total return is somewhat misleading when applied to the farm equipment items. Assuming the same percentage of return, 71% Farm and 29% Non-Farm for the one division maintaining this breakdown, would be applicable to the other seven divisions the percentage of saturation for the company as a whole on items 12 to 23, inclusive would be as follows: Brooders, 25.01- Barn Ventilation, .45 - Milking Machine, 11.26 - Milk Coolers, 4.33 - Dairy Water Heaters, 4.00 - Feed Grinders, 1.60 - Feed Mixers, .50 - Elevators or Conveyors, 3.43 - Hay or Grain Driers, .67 - Stock Tank Heaters, 2.03 - Welders, 1.92 - Motors 1 hp and over, 14.17.

AGRICULTURAL DEVELOPMENT BY A UTILITY

By

Bud S Moss - Agricultural Agent
Community Development Division
Georgia Power Company
Atlanta, Georgia

Before Agricultural Development Committee, Southeastern
Electric Exchange, Atlanta Biltmore Hotel, Atlanta, Ga,
October 26, 1949

Last year I had the pleasure of discussing with this committee the Agricultural Promotional activities of the Georgia Power Company: how we went about selecting the particular projects to promote, how we set them up and got them into operation. As you will recall our program started in the Spring of 1948, and at the time I appeared before this committee, the program had not been in operation long enough to give you any of the results. I am now able to bring you up to date on our activities, and also to give you an idea of our plans for the coming year.

The first activity that was set up was the 1948 Hybrid Corn Production for the state 4-H clubs. Twelve counties scattered over the state were selected -- and each County Agent picked 12 4-H club members to participate in the program. The Georgia Power Company furnished seed and prize money, totaling \$1,000. Each boy planted one acre of corn, using practices recommended by his County Agent and the State Agricultural Extension Service. Of the 144 boys who started this project, 136 completed -- with an average yield of 59-8/10 bushels per acre, compared with the state average of 16 bushels per acre. On December 17, 1948, a luncheon was given in Macon, Georgia, at the Lanier Hotel honoring the first four winners in each County. The County Agents, State 4-H leaders, Extension Service personnel, newspaper and radio representatives, as well as several Company vice presidents and division managers, district and local managers attended this luncheon, at which time prizes were awarded.

This Hybrid Corn Program is in operation again this year in 12 new counties on a similar basis. In addition to the seed, the \$1,000 prize money, and the luncheon to be held December 16, the Company also gave each of the 4-H club members participating in this year's program a copy of "The Business of Farming," published by the Calloway Foundation.

The 1948-49 Winter Grazing Contest carried on by the Georgia Future Farmers of America in cooperation with this Company was, according to the supervisors of Vocational Agriculture and the chapter advisers, the best contest of any type that has ever been promoted. Of the 240 FFA chapters in Georgia, 180 participated in this contest, with an entry of 1,872 -- 1,621 completed their projects, planting 5,631 acres of winter grazing on which 8,788 animals were grazed. In the planting of this 5,631 acres of winter grazing, the boys used 426,367 pounds of seed, and 3,827-5/10 tons of fertilizer. In selecting the 8 district winners the judging was started on

a local basis. Three county agricultural workers visited each boys project to select the chapter winner -- then a committee of three district agricultural workers were selected by the district supervisors to visit each chapter winner. This enabled them to choose the first 8 district winners. The state supervisor then appointed a member of the State Soil Conservation Staff, a Pasture Specialist from the Georgia Experiment Station, and a commercial feed company representative to visit the first two winners in each vocational district and select the state winner.

The Winter Grazing Program received extensive publicity and pictures by the local and state newspapers, "Progressive Farmer", and the State FFA publications.

The third activity for 1948-49 was a Year-round Grazing Contest which was carried on in cooperation with veteran farm training enrollees. At the closing entry date of this contest there were 2,390 veterans who had entered, but due to the widespread interest in this program and additional enrollment in the farm training program, there were 2,824 veterans who completed year-round grazing projects, planting a total of 154,465 acres. Of this amount, 81,357 acres were permanent pasture, 47,500 temporary winter grazing, and 25,608 acres were temporary summer grazing. In planting these pastures they used 2,282,256 pounds of seed, 2,017,161 sprigs of grass and kudzu crowns, and a total of 27,771-2/10 tons of fertilizer.

The Company procured 500 18" x 24" metal signs which were distributed to veteran farm training enrollees participating in this contest. They were erected along heavily traveled roads on the best acreage in each county of our territory. Fifty additional signs were purchased by the State Vocational Department, and were erected in counties not served by the Georgia Power Company.

The judging for this contest was done in a similar manner to the Winter Grazing Contest. The state judges being Dr Harry L Brown, Vice Chancellor of the University System of Georgia, coordinating the College of Agriculture, Georgia Extension Service and the Georgia Experiment Stations, Dr C C Murray, Director of Georgia Experiment Stations, and Mr L J Stevens, Pasture Specialist, Georgia Coastal Plains Experiment Station. These men were joined by the State Supervisor of Vocational Education and several members of his staff, as well as Mr Robert Wardle, Jr, head of the Community Development Division. We traveled some 1,400 miles visiting 8 pastures scattered over Georgia, in order to select the state winner.

This program created quite a bit of interest from outside people, and received publicity at regular intervals from local and state newspapers.

On June 17th the Company was host at a luncheon at Plant Atkinson, at which time prizes were awarded to 32 FFA winners and 4 advisers, totaling \$1,000. Also 32 veteran enrollees and 4 instructors received prizes in the amount of \$1,000. In addition to the winners who attended, there were 35 Vocational Teachers, 30 Veteran Farm Training Instructors, Vocational and Veteran Supervisors, personnel from the Teacher Training Department of the University of Georgia, representatives from the College of Agriculture and Experiment Stations, newspaper and radio representatives, and executive personnel of the general and division offices, district and local managers

of the Georgia Power Company who were invited to this meeting. The program consisted of the following: Mr Robert Wardle, Jr, Manager of the Community Development Division, was master of ceremonies; Mr C A Collier, Vice President in charge of sales, awarded the prizes; short talks were made by Mr T G Walters, State Supervisor of Vocational Agriculture, Dr C C Murray, Director of Georgia Experiment Station, Mr Bob Blalock, President, Georgia Future Farmers organization, Mr John T Cannon, state winner of the veteran's grazing contest; Mr C B McManus, President of the Georgia Power Company, made the concluding remarks. After this program a tour of Plant Atkinson was conducted for all visitors.

Due to the amount of interest created by these two contests, the company is again sponsoring them.

The Teacher Training Department of the University of Georgia has prepared a detailed teaching bulletin covering the research pasture work at the experiment stations, the results they have obtained, and their plans for the future, as well as successful farm demonstrations and operations on pasture work. These bulletins, along with 110 colored slides on pasture scenes, have been distributed to each Vocational Teacher and Veteran Farm Training Instructor. It is estimated that there will be some 15,000 veteran farm training enrollees participating in this year's program.

A joint project between the Vocational Agriculture Department and the Georgia Power Company will be the making of a 25-minute, sound film, in color, on the pasture work being developed as a result of this program. This film will be started the latter part of October, will show all stages of pasture development and grazing, and will wind up with the awarding of prizes in the summer of 1950.

The fourth activity that we are promoting is a "Back-to-the-Farm" Program in cooperation with the Georgia Electric Membership Cooperatives. Last year when appearing before this committee, tentative plans had been worked out with five electric membership cooperatives located in Northwest Georgia, whereby the Company would furnish five bushels of certified seed wheat to be given as draw prizes to farm members in each cooperative area. This activity has gained in popularity until 20 additional cooperatives have been included in the program. Certificates, given to the winners, will be exchanged for seed 30 days prior to planting.

The Project Superintendents, County Agents and the draw prize winners located in the Northwest Georgia area were given a luncheon in Cartersville. Mr M W H Collins, Director of the Georgia Institute of Genetics, discussed the production of chancellor wheat, and conducted a group on a tour of the Genetic Farm. After this tour the prize wheat was distributed to the draw prize winners.

Draw prize winners in other sections had the seed delivered to them by a representative of the Georgia Power Company and an electric membership cooperative manager.

The Company is also promoting the development of sweet corn production due to the increase in number of farm markets in Georgia, and the need for improving the quality of farm products delivered to these markets.

In each division of the Company sweet corn seed for one acre was furnished 8 to 15 farmers, 4-H Club boys, FFA members and veteran farm training enrollees. The seed were distributed through the County Agents, Vocational Agriculture Teachers and Veteran Farm Training Instructors. Some of these projects were very successful in that the receipts were \$125 to \$150 per acre. The success of this program will be depended upon the solution of the problem of marketing this new variety of roasting ear -- and upon the education progress which we will make in the next few years.

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